DETAILED ACTION

1. This action is in response to correspondence filed 14 July 2008.

2. Claims 1-4, 6-9, 11-20, 24-26 and 29-46 remain pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, 6-9, 11-20, 24-26 and 29-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atwal et al. (US 2003/0061404 A1), hereinafter referred to as Atwal, in view of Kokkonen et al. (US 7,016,892 B1), hereinafter referred to as Kokkonen.

4. Regarding claim 1, Atwal discloses a method comprising:

providing a plurality of interface modules (Figure 2, client applications 15) each capable of establishing communications with one or more of a plurality of network services (Fig. 2, client applications 15 establish connections with web services 32), wherein the plurality of network services comprise markup-language-based web services (Fig. 2, web services 32);

providing one logical access point (Fig. 2, gateway module 300) to the plurality of interface modules to facilitate a service request from an application (p. 4, para. 0051, gateway intercepts requests from client applications), the service request including one or more service related parameters (p. 4, para. 0052, request includes a method call);

determining, via a markup-language-based web services registry (Figure 5, registry 530), service parameters that describe application interfaces of the plurality of web services (p. 4, para. 0053, repository includes web service identities);

comparing the one or more service related parameters to service parameters associated with the plurality of network services (p. 4, para. 0053, attributes are compared to assist gateway) and in response, automatically selecting the network service whose service parameters provide the greatest compatibility with the one or more service related parameters (p. 4, para. 0053, select matching web service); and

automatically establishing a connection between the application and the selected network service via the logical access point (p. 4, para. 0053 – determine web service and make connection).

Atwal teaches the selection of a web service with respect to specific parameters set forth by the requesting client, but does not explicitly teach the selection based on a determination of “a best match among two or more compatible one of the plurality network services capable of handling the service request.” However in related art, Kokkonen teaches on this aspect wherein Kokkonen teaches the selection of web services based on frequency scores which translate as to which web services would be most beneficial for a requesting client's needs (col. 2, ll. 6-16). One of ordinary skill in the art at the time of the applicant's invention would have found it obvious to combine the web service selection technique based on frequency taught by Kokkonen with the web service gateway as taught by Atwal. One of ordinary skill in the art would have been motivated to combine Kokkonen with Atwal wherein Kokkonen teaches the need

in the art to be able to select available and/or new web services specifically based on a requesting client's actual need (col. 1, ll. 43-50).

5. Regarding claim 2, Atwal and Kokkonen teach the method wherein providing a plurality of interface modules comprises providing a plurality of software objects accessible by message received from the one logical access point (Atwal, Fig. 5, web service registry repository 530).

6. Regarding claim 3, Atwal and Kokkonen teach the method further comprising receiving the one or more service related parameters via the one logical access point (Atwal, Fig. 2, gateway module 300 intercepts requests from client applications).

7. Regarding claim 4, Atwal and Kokkonen teach the method further comprising receiving the one or more service related parameters via an external connection (Atwal, Figure 2, client applications 15 submit requests).

8. Regarding claim 6, Atwal and Kokkonen teach the method wherein selecting the network service further comprises initiating a business agreement with the network service if the network service is not a member of the business agreement portion of the one or more service related parameters (Atwal, p. 12, para. 0129 – logging and metering module makes records with respect to usage for billing at a later time).

9. Regarding claim 7, Atwal and Kokkonen teach the method wherein providing a plurality of interface modules comprises providing a plurality of network address translation proxies accessible by messages received from the one logical access point (Atwal, p. 4, para. 0050, unique ID translation).

10. Regarding claim 8, Atwal and Kokkonen teach the method further comprising receiving the one or more service related parameters via the one logical access point (Atwal, Fig. 2, gateway module 300 intercepts requests from client applications).

11. Regarding claim 9, Atwal and Kokkonen teach the method further comprising receiving the one or more service related parameters via an external connection (Atwal, Figure 2, client applications 15 submit requests).

12. Regarding claim 11, Atwal and Kokkonen teach the method wherein selecting the network service further comprises initiating a business agreement with the network service if the network service is not a member of the business agreement portion of the one or more service related parameters (Atwal, p. 12, para. 0129 – logging and metering module makes records with respect to usage for billing at a later time).

13. Regarding claim 12, Atwal discloses a system comprising:

a plurality of service components distributed within at least one network (Fig. 2, web services 32), wherein the plurality of service components comprise markup-language-based web service components (Fig. 2, web services 32); and

an interface module having a plurality of interface objects (Fig. 2, gateway module 300) each capable of establishing communications with one or more of the plurality of service components in response to a service request having associated service request parameters (Fig. 2, client applications 15 establish connections with web services 32), the interface module including:

a lookup object in communication with a markup-language-based web services registry to establish connection parameters required between the one or

more of the plurality of service components and one of the plurality of interface objects (Figure 5, registry 530) to establish connection parameters required between the one or more of the plurality of service components and one of the plurality of interface objects (Fig. 2, client applications 15 establish connections with web services 32);

a data object in communication with the lookup object to provide parameters identifying attributes associated with the plurality of service components (p. 4, para. 0053, repository includes web service identities), wherein the attributes describe application interfaces of the plurality of service components (p. 4, para. 0053, repository includes web service identities); and

a single logical access point (Fig. 2, gateway module 300) to allow external access to the plurality of interface objects (Fig. 2, client applications 15 establish connections with web services 32 through gateway 300), wherein the selected network service has attributes that are most compatible with the associated service request parameters is automatically selected by the lookup object (p. 4, para. 0053, select matching web service), wherein the logical access point facilitates automatically establishing a connection between an originator of the service request and the selected network service (p. 4, para. 0053 – determine web service and make connection).

Atwal teaches the selection of a web service with respect to specific parameters set forth by the requesting client, but does not explicitly teach the selection based on a determination of “a best match among two or more compatible one of the plurality

network services capable of handling the service request." However in related art, Kokkonen teaches on this aspect wherein Kokkonen teaches the selection of web services based on frequency scores which translate as to which web services would be most beneficial for a requesting client's needs (col. 2, ll. 6-16). One of ordinary skill in the art at the time of the applicant's invention would have found it obvious to combine the web service selection technique based on frequency taught by Kokkonen with the web service gateway as taught by Atwal. One of ordinary skill in the art would have been motivated to combine Kokkonen with Atwal wherein Kokkonen teaches the need in the art to be able to select available and/or new web services specifically based on a requesting client's actual need (col. 1, ll. 43-50).

14. Regarding claim 13, Atwal and Kokkonen teach the system wherein the plurality of interface objects includes software objects accessible by messages received from the single logical access point (Atwal, Fig. 5, web service registry repository 530).

15. Regarding claim 14, Atwal and Kokkonen teach the system wherein the lookup object comprises a matchmaking function to promote business agreements with the network service in response to the associated service request parameters (Atwal, p. 6, para. 0068, use client billing information to select).

16. Regarding claim 15, Atwal and Kokkonen teach the system wherein the lookup object comprises a decision function to receive the associated service request parameters and to provide the required connection parameters in response to the associated service request parameters (Atwal, p. 4, para. 0053, repository includes web service identities).

17. Regarding claim 16, Atwal and Kokkonen teach the system wherein the plurality of interface objects includes a plurality of network address translation proxies accessible by messages received from the single logical access point (Atwal, p. 4, para. 0050, unique ID translation).

18. Regarding claim 17, Atwal and Kokkonen teach the system wherein the lookup object comprises a matchmaking function to promote business agreements with the network service in response to the associated service request parameters (Atwal, p. 6, para. 0068, use client billing information to select).

19. Regarding claim 18, Atwal and Kokkonen teach the system wherein the lookup object comprises a decision function to receive the associated service request parameters and to provide the required connection parameters in response to the associated service request parameters (Atwal, p. 4, para. 0053, repository includes web service identities).

20. Regarding claim 19, Atwal discloses a computer-readable storage medium having computer-executable instructions for performing steps comprising:

providing a plurality of interface modules (Figure 2, client applications 15) each capable of establishing communications with one or more of the plurality of network services (Fig. 2, client applications 15 establish connections with web services 32) associated service attributes that describe application interfaces of the plurality of web services, wherein the plurality of network services comprise markup-language-based web services (Fig. 2, web services 32), wherein one logical access point (Fig. 2, gateway module 300) to the plurality of interface modules allows external invocation of

the network service by an application (p. 4, para. 0051, gateway intercepts requests from client applications);

determining, via a markup-language-based web services registry (Figure 5, registry 530), the attributes associated with the plurality of network services (p. 4, para. 0053, attributes are compared to assist gateway);

receiving network service related parameters with the invocation (p. 4, para. 0052, request includes a method call);

automatically establishing a connection between the application and the selected network service (p. 4, para. 0053 – determine web service and make connection).

Atwal teaches the selection of a web service with respect to specific parameters set forth by the requesting client, but does not explicitly teach the selection based on a determination of "a best match among two or more compatible one of the plurality network services capable of handling the service request." However in related art, Kokkonen teaches on this aspect wherein Kokkonen teaches the selection of web services based on frequency scores which translate as to which web services would be most beneficial for a requesting client's needs (col. 2, ll. 6-16). One of ordinary skill in the art at the time of the applicant's invention would have found it obvious to combine the web service selection technique based on frequency taught by Kokkonen with the web service gateway as taught by Atwal. One of ordinary skill in the art would have been motivated to combine Kokkonen with Atwal wherein Kokkonen teaches the need

in the art to be able to select available and/or new web services specifically based on a requesting client's actual need (col. 1, ll. 43-50).

21. Regarding claim 20, Atwal and Kokkonen teach the computer-readable storage medium wherein the computer-executable instruction step of providing a plurality of interface modules comprises providing a plurality of software objects accessible by messages received from the one logical access point (Atwal, Fig. 5, web service registry repository 530).

22. Regarding claim 24, Atwal and Kokkonen teach the computer-readable storage medium wherein the computer-executable instruction step of automatically selecting the network service further comprises using the service related parameters to initiate a business agreement with the network service (Atwal, p. 6, para. 0068, use client billing information to select).

23. Regarding claim 25, Atwal and Kokkonen teach the computer-readable storage medium wherein the computer-executable instruction step of providing a plurality of interface modules comprises providing a plurality of network address translation proxies accessible by messages received from the one logical access point (Atwal, p. 4, para. 0050, unique ID translation).

24. Regarding claim 26, Atwal and Kokkonen teach the computer-readable storage medium wherein the computer-executable instruction step of receiving service related parameters comprises receiving the service related parameters via the one logical access point (Atwal, p. 4, para. 0051, gateway intercepts requests from client applications).

25. Regarding claim 29, Atwal and Kokkonen teach the computer-readable storage medium wherein the computer-executable instruction step of selecting the network service further comprises using the service related parameters to initiate a business agreement with the network service (Atwal, p. 12, para. 0129 – logging and metering module makes records with respect to usage for billing at a later time).

26. Regarding claim 30, Atwal and Kokkonen teach the method wherein selecting the network service further comprises selecting the network service that is a member of a business agreement portion of the one or more service related parameters (Atwal, p. 6, para. 0068, use client billing information to select).

27. Regarding claim 31, Atwal and Kokkonen teach the method wherein selecting the network service further comprises using a cost function of the one or more service relate parameters to select the most cost effective network service from the plurality of network services (Atwal, p. 13, para. 0136, client applications subscribe to web services).

28. Regarding claim 32, Atwal and Kokkonen teach the method wherein selecting the network service further comprises using a cost function of the one or more service related parameters to select a most cost effective network service from the plurality of network services (Atwal, p. 13, para. 0136, client applications subscribe to web services).

29. Regarding claim 33, Atwal and Kokkonen teach the method further comprising automatically establishing a connection between the application and the selected

network service (Atwal, p. 4, para. 0053 – determine web service and make connection).

30. Regarding claim 34, Atwal and Kokkonen teach the system wherein the lookup object automatically connects the selected network service to the external access via the interface objects (Atwal, p. 4, para. 0053 – determine web service and make connection).

31. Regarding claim 35, Atwal discloses a method comprising:

providing a plurality of interface modules (Figure 2, client applications 15) capable of establishing network communications with a plurality of service components that comprise markup-language-based web service components (Fig. 2, client applications 15 establish connections with web services 32);

determining, via a markup-language-based web services registry (Figure 5, registry 530), service parameters that describe application interfaces of the plurality of service components (p. 4, para. 0053, repository includes web service identities);

providing one logical access point (Fig. 2, gateway module 300) to the plurality of interface modules to facilitate a service request from an application (p. 4, para. 0051, gateway intercepts requests from client applications), the service request including service parameters (p. 4, para. 0052, request includes a method call) having a business agreement portion having a current business agreement with the application (p. 6, para. 0068, use client billing information to select);

automatically selecting the service component that is included in the business agreement portion of the service request and having a service parameter and one or

more service related parameters of the service request (p. 6, para. 0068, use client billing information to select), wherein the service component is automatically connected to the application in response to automatically selecting the service component (p. 4, para. 0053 – determine web service and make connection).

Atwal teaches the selection of a web service with respect to specific parameters set forth by the requesting client, but does not explicitly teach the selection based on a determination of "a best match among two or more compatible one of the plurality network services capable of handling the service request." However in related art, Kokkonen teaches on this aspect wherein Kokkonen teaches the selection of web services based on frequency scores which translate as to which web services would be most beneficial for a requesting client's needs (col. 2, ll. 6-16). One of ordinary skill in the art at the time of the applicant's invention would have found it obvious to combine the web service selection technique based on frequency taught by Kokkonen with the web service gateway as taught by Atwal. One of ordinary skill in the art would have been motivated to combine Kokkonen with Atwal wherein Kokkonen teaches the need in the art to be able to select available and/or new web services specifically based on a requesting client's actual need (col. 1, ll. 43-50).

32. Regarding claim 36, Atwal and Kokkonen teach the method wherein the service parameters further include a cost function to facilitate selection of the service component whose cost is minimized (Atwal, p. 13, para. 0136, client applications subscribe to web services).

33. Regarding claim 37, Atwal and Kokkonen teach the method wherein the service parameters further include an application identification to facilitate selection of the service component whose service level is commensurate with the application identification (Atwal, p. 4, para. 0053, select matching web service).

34. Regarding claim 38, Atwal and Kokkonen teach the method wherein the service parameters further include a service provider identification to facilitate selection of the service component whose service level is commensurate with the application identification (Atwal, p. 4, para. 0052, matching web service is determined based on client request).

35. Regarding claim 39, Atwal discloses an apparatus comprising:

a plurality of interface objects (Figure 2, client applications 15) each capable of receiving a service request having associated service request parameters and establishing communications with one or more of the plurality of service components distributed within a network in response to the service request (Fig. 2, client applications 15 establish connections with web services 32), wherein the plurality of service components comprise markup-language-based web service components (Fig. 2, web services 32);

a lookup object in communication (Fig. 2, gateway module 300) with a markup-language-based web services registry (Figure 5, registry 530) to establish connection parameters required between the one or more of the plurality of service components and one of the plurality of interface objects (p. 4, para. 0053 – determine web service and make connection);

a data object in communication with the lookup object to provide parameters identifying attributes associated with the plurality of service components (p. 4, para. 0053, repository includes web service identities), wherein the attributes describe application interfaces of the plurality of service components (p. 4, para. 0053, repository includes web service identities); and

a single logical access point (Fig. 2, gateway module 300) to allow external access to the plurality of interface objects (Fig. 2, client applications 15 establish connections with web services 32 through gateway 300), wherein the logical access point facilitates automatically establishing a connection between an originator of the service request and the selected network service (p. 4, para. 0053 – determine web service and make connection).

Atwal teaches the selection of a web service with respect to specific parameters set forth by the requesting client, but does not explicitly teach the selection based on a determination of “a best match among two or more compatible one of the plurality network services capable of handling the service request.” However in related art, Kokkonen teaches on this aspect wherein Kokkonen teaches the selection of web services based on frequency scores which translate as to which web services would be most beneficial for a requesting client's needs (col. 2, ll. 6-16). One of ordinary skill in the art at the time of the applicant's invention would have found it obvious to combine the web service selection technique based on frequency taught by Kokkonen with the web service gateway as taught by Atwal. One of ordinary skill in the art would have been motivated to combine Kokkonen with Atwal wherein Kokkonen teaches the need

in the art to be able to select available and/or new web services specifically based on a requesting client's actual need (col. 1, ll. 43-50).

36. Regarding claim 40, Atwal and Kokkonen teach the apparatus wherein the plurality of interface objects includes software objects accessible by messages received from the single logical access point (Atwal, Fig. 5, web service registry repository 530).

37. Regarding claim 41, Atwal and Kokkonen teach the apparatus wherein the lookup object comprises a matchmaking function to promote business agreements with the network service in response to the associated service request parameters (Atwal, p. 6, para. 0068, use client billing information to select).

38. Regarding claim 42, Atwal and Kokkonen teach the apparatus wherein the lookup object further comprises a decision function to receive the associated service request parameters and to provide the required connection parameters in response to the associated service request parameters (Atwal, p. 4, para. 0053, repository includes web service identities).

39. Regarding claim 43, Atwal and Kokkonen teach the apparatus wherein the plurality of interface objects includes a plurality of network address translation proxies accessible by messages received from the single logical access point (Atwal, p. 4, para. 0050, unique ID translation).

40. Regarding claim 44, Atwal and Kokkonen teach the apparatus wherein the lookup object comprises a matchmaking function to promote business agreements with the network service in response to the associated service request parameters (Atwal, p. 6, para. 0068, use client billing information to select).

41. Regarding claim 45, Atwal and Kokkonen teach the apparatus wherein the lookup object further comprises a decision function to receive the associated service request parameters and to provide the required connection parameters in response to the associated service request parameters (Atwal, p. 4, para. 0053, repository includes web service identities).

42. Regarding claim 46, Atwal and Kokkonen teach the apparatus wherein the lookup object automatically connects the selected network service to the external access via the interface objects (and Kokkonen teach Fig. 2, client applications 15 establish connections with web services 32 through gateway 300).

Response to Arguments

43. Applicant's arguments, see Remarks, filed 14 July 2008, with respect to the rejection(s) of claim(s) 1-4, 6-9, 11-20, 24-26 and 29-46 under 35 USC 102(e) in view of Atwal (US 20030061404 B1) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Atwal (US 20030061404 B1) and Kokkonen et al. (US 7,016,892 B1).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Ailes whose telephone number is (571)272-3899. The examiner can normally be reached Monday-Friday, 5:30-8:30AM, 1:00-6:00PM, IFP Hoteling schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. A. A./
Examiner, Art Unit 2442

/Andrew Caldwell/
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